

REMARKS

In the Office Action¹ dated August 8, 2008, the Examiner:

- Rejected claims 15, 25-33, and 36 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,799,027 to Anayama et al. ("*Anayama*");
- Rejected claims 34, 35, and 37 under 35 U.S.C. § 103(a) as being unpatentable over *Anayama* in view of U.S. Patent No. 7,075,165 to Leon et al. ("*Leon*"); and
- Indicated that claims 16-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

By this amendment, Applicants cancel claim 15, amend claims 16-37, withdraw claims 38-49, and add new claims 50 and 51. Claims 16-51 are now pending.

Rejection under 35 U.S.C. § 102(b)

In the Office Action, the Examiner rejected claims 15, 25-33, and 36 under 35 U.S.C. § 102(b) as being anticipated by *Anayama*. Office Action, page 2. Applicant have replaced claim 15 with new claim 50. Applicants respectfully traverse the rejection of claims 15, 25-33, and 36 and respectfully submit that now-pending claims 16-37 and 50 are in condition for allowance.

In order to properly establish that *Anayama* anticipates Applicant's claimed invention under 35 U.S.C. § 102, each and every feature of each of the claims in issue must be found, either expressly described or under principles of inherency, in that single reference. Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in the ... claim." See M.P.E.P. § 2131, quoting *Richardson v. Suzuki*

¹ The Office Action may contain a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicants decline to automatically subscribe to any statement or characterization in the Office Action.

Motor Co., 868 F.2d 1126, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). *Anayama*, however, does not teach or suggest each and every element of old claim 15 or newly added claim 50. Specifically, *Anayama* does not disclose or suggest at least Applicants' claimed semiconductor optoelectronic waveguide including, for example, "a set of **n-type electrode layers** having an upper n-type electrode layer and a lower n-type electrode layer." (Emphasis added).

Anayama discloses "[a] laminated layer of Au, Ge, and Au [that] is being formed as an **n-side electrode 21 on the bottom of the n-type GaAs substrate**, and a laminated layer of AuZn and Au is being formed as a p-side electrode 22 on the top of the p-type contact layer 10." ((Emphasis added), Figures 7, 11, and 18; column 15, lines 17-48). Thus, *Anayama* discloses only one n-side electrode layer which is formed on the bottom of the substrate. Such a disclosure, however, does not constitute "a set of **n-type electrode layers** having an upper n-type electrode layer and a lower n-type electrode layer," (emphasis added) as now recited in claim 50. This is because, *Anayama* simply does not disclose the claimed "n-type electrode **layers**."

Further, *Anayama* does not disclose the arrangement of layers as recited in claim 50. For example, on page 3 of the Office Action, the Examiner appears to set forth that blocking layer 7a and p-type cladding layer 7b of *Anayama* constitutes Applicants' claimed "pn junction." Even assuming that layers 7a and 7b of *Anayama* could constitute Applicants' claimed pn junction layer, which Applicants do not concede, this arrangement of *Anayama* is contradictory to the arrangement of claim 50 because layers 7a and 7b are arranged adjacent to each other, while the claimed "pn junction" includes "a p-type layer arranged between said upper n-type electrode layer and said

first layer” and “an n-type layer arranged between said upper n-type electrode layer and said p-type layer.”

Moreover, on page 3 of the Office Action, the Examiner also alleged that “the functional recitation that ‘the third semiconductor layer is functioning as an n-type electrode layer’ is insufficient to patentable [*sic*] the claimed apparatus from the apparatus disclosed by (Anayama t [*sic*] al.).” Applicants respectfully disagree. However, to advance prosecution, Applicants have positively recited in claim 50 “a set of n-type electrode layers.” Thus, the n-type electrode layers are claimed as features of claim 50 and are not functional recitations.

Therefore, *Anayama* does not teach, or even suggest, the claimed features including, for example, “a set of **n-type electrode layers** having an upper n-type electrode layer and a lower n-type electrode layer,” (emphasis added) as recited in claim 50.

Accordingly, *Anayama* cannot anticipate claim 50. Thus, claim 50 is allowable for at least these reasons. Claims 25-33 and 36 are also allowable due to their dependence from claim 50.

Accordingly, for at least the above-noted reasons, Applicants request withdrawal of the 35 U.S.C. § 102(b) rejection of claims 15, 25-33, and 36.

Rejections under 35 U.S.C. § 103(a)

Applicant traverses the rejection of claims 34, 35, and 37 under 35 U.S.C. § 103(a) as being unpatentable over *Anayama* in view of *Leon*. No *prima facie* case of obviousness has been established.

As discussed above, *Anayama* does not disclose, nor does it teach or suggest, all the features of independent claim 50. Claims 34, 35, and 37 depend on claim 50 and thus, include all the features of claim 50. *Leon* does not cure the deficiencies of *Anayama*. That is *Leon* also does not teaches or suggest the arrangement of layers of the claimed semiconductor optoelectronic waveguide including, for example, “a set of n-type electrode layers having an upper n-type electrode layer and a lower n-type electrode layer,” and a “pn junction” including “a p-type layer arranged between said upper n-type electrode layer and said first layer” and “an n-type layer arranged between said upper n-type electrode layer and said p-type layer,” as recited in claim 15, and included in dependent claims 34, 35, and 37.

For at least these reasons, no *prima facie* case of obviousness has been established with respect to dependent claims 34, 35, and 37 and the claims are allowable at least by virtue of their dependence from base claim 50. Accordingly, Applicants request withdrawal of the 35 U.S.C. § 103(a) rejection of dependent claims 34, 35, and 37.

New claim 51 is also allowable over *Anayama* and/or *Leon* based on its dependency on independent claim 50, and further due to the features recited therein.

Allowable Subject Matter

Applicants acknowledge with appreciation the Examiner’s indication that claims 16-24 would be allowable if rewritten in independent form including all of the limitation of the base claim and any intervening claims.

Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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